



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

June 13, 1977

R. W. Daniels
Mineland Coordinator
State of Utah
Division of Oil, Gas and Mining
1588 W-North Temple Street
Salt Lake City, Utah 84116

*Con -
Plateau Resources
file.*

Dear Mr. Daniels:

For your information and file, attached is a copy of our most recent action concerning Hydro-Jet Services, Inc. Source Material License No. SUA-1013.

If there are any questions on this matter, please contact me. (301-427-4103)

Sincerely,

R. Cooperstein

R. Cooperstein
Fuel Processing & Fabrication
Branch
Division of Fuel Cycle and
Material Safety





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FCPF:RC
40-7869
SUA-1013, Amendment No. 1

Plateau Resources Limited
ATTN: R. B. Sewell
Area Manager
101 South Third
Grand Junction, Colorado 81501

Gentlemen:

In accordance with your application dated April 6, 1977 and Hydro-Jet Services, Incorporated's letter dated May 7, 1977, and pursuant to 10 CFR Part 40.46, Source Material License No. SUA-1013 is hereby transferred to Plateau Resources Limited. Accordingly, Items 1 and 2 are amended to read as follows:

Item 1: Plateau Resources Limited

Item 2: 101 South Third
Grand Junction, Colorado 81501

All other conditions of the license shall remain the same.

As I discussed in a telephone conversation on June 7, 1977 with Mr. Sewell of your staff, please supplement Appendix C of your letter dated April 6, 1977 to provide the qualifications of the person trained in the radiological aspects of the operation. The description of qualifications should confirm adequate training and experience to perform the required radiation monitoring and sampling program, including radon sampling and analysis, or state that qualified consultants will be used to assist the leaching facility superintendent.

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We would welcome the opportunity of meeting with you and your consultants to discuss the scope, status and anticipated schedule for the submission of an environmental report addressing the facility and its operation so that we can establish a schedule for processing the document.

For your information, enclosed is a staff outline of major performance objective considerations for an acceptable tailings management and reclamation program.

FOR THE NUCLEAR REGULATORY COMMISSION

Original Signed by
Leland C. Rouse

Leland C. Rouse, Chief
Fuel Processing & Fabrication Branch
Division of Fuel Cycle and Material Safety

Enclosure:
As stated

BRANCH POSITION - URANIUM MILL TAILINGS MANAGEMENT
Fuel Processing and Fabrication Branch

Background

A major expansion in the uranium industry is taking place. Many times more uranium will be extracted in the upcoming decades than has been extracted so far. This requires that the NRC examine very closely the past problem areas encountered in the uranium industry and make sure they are not compounded on an even larger scale.

The first major portion of the industry within the licensing jurisdiction of the NRC is uranium milling. The major problem encountered in past milling operations is the management of tailings generated by the milling process. Although the concentration of radioactivity in the tailings is relatively low, control measures are necessary because of the large quantities involved and because of the long half-life of the parent radionuclides that are present.

The management of mill tailings has received increasing attention and interest in recent years from involved federal and state agencies and from environmental conservation groups. This interest has resulted from studies carried out during the last decade which have indicated that uranium mill tailings, if not properly managed and controlled, could present a potential public health hazard. The most vivid example, of course, is the situation that occurred in Grand Junction. The remedial actions determined necessary to correct the misuse of tailings in the construction of homes, schools, and other public structures are continuing at substantial cost to the Federal Government and the State of Colorado.

In addition, final technical resolution and financial responsibility for the disposition of tailings at the 22 "inactive" sites being evaluated by ERDA will further increase public, state, and local as well as congressional concern with prevention of similar problems in the future.

It is incumbent on NRC and the uranium industry to assure that current and future licensed milling operations do not result in similar situations.

Towards this end, the NRC staff has developed performance objectives for an acceptable tailings management program based on the most up-to-date technology available today.

Position

The staff is of the opinion that an acceptable tailings management program will vary depending on site or region specific parameters, such as geology, hydrology, and meteorology. Viable methods of tailings

management for a specific mill location may include classic impoundment behind a dam, deep mine burial, open pit mine burial, specially excavated pit burial, or even elimination of radioactive waste by process variations.

Considering the many variables involved, the staff will use the following performance objectives to determine the adequacy of proposed site specific tailings management programs.

Siting and Design

1. Locate the tailings isolation area remote from people such that population exposures would be reduced to the maximum extent reasonably achievable.
2. Locate the tailings isolation area such that disruption and dispersion by natural forces is eliminated or reduced to the maximum extent reasonably achievable.
3. Design the isolation area such that seepage of toxic materials into the groundwater system would be eliminated or reduced to the maximum extent reasonably achievable.

During Operations

4. Eliminate the blowing of tailings to unrestricted areas during normal operating conditions.

Post Reclamation

- *5. Reduce direct gamma radiation from the impoundment area to essentially background.
- *6. Reduce the radon emanation rate from the impoundment area to about twice the emanation rate in the surrounding environs.
- *7. Eliminate the need for an ongoing monitoring and maintenance program following successful reclamation.
- *8. Provide surety arrangements to assure that sufficient funds are available to complete the full reclamation plan.

Implementation

All objectives will be considered and satisfied during the review of proposed tailings management programs for new milling operations.

Current licensees' tailings management programs will be reviewed to determine the best way to apply objectives 4 through 8 to the extent practicable.

During the course of license renewal reviews, the locations of existing tailings areas will be reviewed considering objectives 1 through 3 to determine if sufficient cause exists to require an alternate disposal location for tailings generated by future milling operations and the relocation of existing tailings at the time of mill decommissioning.